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ABSTRACT

This report presents the first phase of an ongoing longitudinal study that explores the contexts in which children of various sociocultural groups experience literacy as they make the transition to formal schooling. Participants were the caregivers of pre-kindergarten children attending Baltimore public schools that served neighborhoods varying in income level and ethnicity. Parents' spontaneous reports of children's everyday activities were collected over a one-week period. Parents were later questioned about children's participation in selected activities. The goal was to document the home experiences through which early literacy is nurtured and to explore the cultural themes informing the literate activities in the home. Families in all socio-cultural groups reported that their children had frequent opportunities to engage in activities with the potential to foster development in several domains conducive to literacy: orientation toward print (e.g., storybook reading), phonological awareness (e.g., singing), knowledge of the world (e.g., television viewing), and narrative competence (e.g., mealtime conversation). Middle-income families showed greater endorsement of literacy as a source of entertainment. Lower-income families, in contrast, gave more attention to literacy as a skill to be deliberately cultivated. (Contains 63 references and 6 tables of data. The recording form for the second visit with the family, and the coding scheme for print-related experiences reported in the diaries are attached.) (Author/RS)

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READING RESEARCH REPORT NO. 24
Fall 1994

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About the National Reading Research Center

The National Reading Research Center (NRRC) is funded by the Office of Educational Research and Improvement of the U.S. Department of Education to conduct research on reading and reading instruction. The NRRC is operated by a consortium of the University of Georgia and the University of Maryland College Park in collaboration with researchers at several institutions nationwide.

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Abstract. *This report presents the first phase of an ongoing longitudinal study that explores the contexts in which children of various sociocultural groups experience literacy as they make the transition to formal schooling. Participants were the caregivers of pre-kindergarten children attending Baltimore public schools that served neighborhoods varying in income level and ethnicity. Parents' spontaneous reports of children's everyday activities were collected over a one-week period. Parents were later questioned about children's participation in selected activities. Our goal was to document the home experiences through which early literacy is nurtured and to explore the cultural themes informing the literate activities in the home. Families in all sociocultural groups reported that their children had frequent opportunities to engage in activities with the potential to foster development in several domains conducive to literacy: orientation toward print (e.g., storybook reading), phonological awareness (e.g., singing), knowledge of the world (e.g., television viewing), and narrative competence (e.g., mealtime conversation). Middle-income families showed greater endorsement of literacy as a source of entertainment. Lower-income families, in contrast, gave more attention to literacy as a skill to be deliberately cultivated.*

This report describes the first phase of an ongoing project that explores the contexts in which children of various sociocultural groups experience literacy as they make the transition from pre-kindergarten through the early years of elementary schooling in a large city. Of central concern is how the overlapping contexts of home and school interact to facilitate or impede reading development. The focal child-

ren in the project were enrolled in public elementary schools serving Baltimore neighborhoods with four different types of populations: (1) low-income, African American families, (2) low-income, European American families, (3) a mixture of low-income, African American and European American families and (4) a mixture of middle-income, African American and European American families.

Our four-year, longitudinal study of this sample uses a combination of qualitative and quantitative measures, including (1) an *ecological inventory* of socialization resources and activities, based on observations, diaries, and interviews in both the home and the school; (2) an account of *socialization ethnotheories*, based on structured interviews about the beliefs, values, and practices of the parents and teachers responsible for structuring those environments; (3) an account of *co-constructive processes* through which children appropriate the cultural resources of literacy, based on observations and videotaped recordings of children's interactions with siblings and adult caregivers at home and with peers and teachers at school; and (4) an assessment of children's *emergent literacy competencies*, in a variety of theoretically important domains, with some tasks individually tailored to the child's own home-based experiences.

This report focuses on the *ecological inventory* of the socialization resources in children's homes and the recurrent activities in which children engage. This inventory documents the contexts that provide opportunities for children's appropriation of literacy. At the time of data collection, the focal children were enrolled in pre-kindergarten.

THEORETICAL FRAMEWORK

The theoretical assumptions of the project are as follows:

1. Human development occurs in a context of overlapping and interdependent systems of social and cultural organization (Bronfenbrenner, 1979).

2. Each child develops within an ecocultural niche structured by physical and social settings, customs of child rearing, and the implicit psychological theories of caregivers (Gallimore & Goldenberg, 1993; Goodnow & Collins, 1990; Serpell, 1993a, 1993b; Super & Harkness, 1986).

3. Most everyday cognitive activities are socially situated and socially distributed (Collins, Brown, & Newman, 1989).

4. Cognitive development occurs through a form of apprenticeship in specific social and cultural contexts (Rogoff, 1990; Vygotsky, 1978).

5. When children are raised in a literate society, they are exposed from infancy to cultural practices that provide opportunities for learning about reading and writing (Morrow, 1989; Sulzby & Teale, 1991).

The hypotheses guiding the project are as follows: (1) distinctive patterns of socialization practices can be identified in the home environments of children being raised as members of different sociocultural groups; (2) those distinc-

tive patterns reflect different implicit theories of child development and parental responsibility among the children's primary caregivers; and (3) a major source of variation in the patterns of school performance by children of different sociocultural groups is the degree to which the socialization practices in their homes match the developmental pathways defined by the curriculum of public elementary schools.

We view human development as occurring within overlapping systems of social and cultural organization (Bronfenbrenner, 1979). Each child develops in an ecocultural niche that is characterized by a constellation of material resources, recurrent activities, and modes of co-constructive participation in those activities. The implicit theories of child development and socialization held by children's principal caregivers (Super & Harkness, 1986) inform the use of these resources. These caregiver "ethnotheories" facilitate understanding among the parents, other caregivers, and children in a given subcultural group, as they provide the framework within which the responsibility and effectiveness of individual acts are evaluated in the course of everyday life. We view literacy as a cultural practice that requires particular information-processing skills, contextual knowledge, and strategies for matching the skills deployed to the context (Scribner & Cole, 1981).

Bronfenbrenner (1979) describes the ecology of human development as systems of interdependent actors embedded within several layers of social organization. Child-caregiver interaction (a *microsystem*) is embedded in a *mesosystem* of family relationships whose members also participate in *exosystem* relationships structured by such factors as residential neighborhood, workplace, religious group membership, networks of kin, friends, and so on. All of these interlocking and partially interdependent mesosystems are embedded within a societal *macrosystem* constituted by social institutions such as laws, macroeconomic variables, public services including schooling, and cultural resources such as language, script, mathematics, science, literature, religion, and educational curricula.

Our investigation documents microsystematic interactions between children, their caregivers, and the mesosystematic patterns of learning opportunities available in the ecocultural niches of children's homes and neighborhoods. We recognize that as children enter school, additional variables come into play that reflect macrosystem inequities. To some extent, the transition from preschool to school age is marked for all children by an element of cultural discontinuity. Children of minority cultural groups, however, are more likely to encounter conflicting messages about behavior that was adaptive at home but not at school. Moreover, the strategies available to such children for dealing with this additional layer of cultural complexity vary, depending on the status of their family's ethnic group relative to mainstream cultural norms (Ogbu, 1990).

Although public schooling is designed to be equally accessible and valuable to all sectors of the society, in practice, some sociocultural groups have consistently fared better in the system than others (Laosa, 1984). We believe that two sets of factors have interacted to determine these differential school success rates: variations in the cognitive repertoires that

children bring to school and variations in the educational practices to which the children are exposed in school. Our perspective on the presence of ethnic and racial inequalities in schooling is similar to one that Laosa (1984) terms "the developmental, socioculturally relativistic paradigm," which "calls for understanding behavior from the varied perspectives of the different groups" (pp. 62–63).

Just as sociolinguistic accounts of language have revealed systematic variation in the speech patterns of English across regions, ethnic groups, and genders within the United States (e.g., Labov, 1972), so ethnographic studies of literacy (Heath, 1983; Scribner & Cole, 1981) are beginning to show that an adequate description of this domain of cognitive activity must take account of the sociocultural context in which it is embedded. Members of the mainstream literacy subculture engage in distinctive "types of uses of reading" including instrumental, news-related, recreational, critical/educational, social-interactional and confirmational activities, as well as distinctive "types of uses of writing," including memory aids, reinforcement or substitutes for oral messages, social-interactional, financial, and expository activities (Heath, 1983). Members of other American subcultures also engage in literate activities, but these are characterized by different types of uses of reading and writing, with different patterns of cognitive demands and opportunities for cognitive development (Nerlove & Snipper, 1981).

Our view of literacy as a system of meaning embedded in cultural practices calls for an account of development at the interface between sociocultural and psychological aspects of cognition. Vygotsky's (1978) theoretical perspective has been widely invoked in the contemporary literature on cognitive development and education for this purpose. Not only did he maintain that social interaction is an important mediator of cognitive development, he also described a formulation of that mediating interface in which technological devices such as writing and mathematics evolve as products of cultural history and also mediate cognitive activity. We see literacy as a cognitive tool with both a cultural history and a developmentally empowering and structuring potential (Berland, 1982; Cole & Griffin, 1980). We also believe that children acquire their competence in the cognitive domain of literacy through guided participation—a form of apprenticeship (Rogoff, 1990). Adults who deploy these cultural resources in their daily lives serve as models of competence for children to emulate. Children's participation in the activities that call for literate skills is regulated by adults in accordance with social norms and modulated in the light of their estimates of children's competence.

How children come to appropriate the cultural resource of literacy is a central concern of the project. We use the term *emergent literacy* to refer to the reading and writing behaviors that precede and develop into conventional literacy (Sulzby & Teale, 1991). The term reflects the belief that when children are raised in a literate society, they are in the process of becoming literate from infancy onward. Thus, behaviors that once would have been regarded as cute but irrelevant approximations to adult literacy become important since they are constructions of the child and are influenced by the variety of social contexts in which literacy is practiced. Thus, a child's early attempts to

"read" a familiar storybook that he or she is holding upside down is a valid construction of what it means to read. Similarly, when "writing" a letter to a grandmother that consists of pictures and scribbles, a child reveals important information about his or her emerging conception of the nature and purposes of writing.

THE NATURE OF CHILDREN'S EVERYDAY EXPERIENCES

Researchers have long been interested in the effects of the home environment on reading. Most of the attention has been directed toward reading achievement, but other aspects include emergent literacy and reading precocity, interests and attitudes toward reading, and volume and frequency of reading. Early research focused predominantly on family status characteristics or "social address" variables (Bronfenbrenner & Crouter, 1982) such as socioeconomic status and parent education level. A second wave of research, recognizing the limitations of status variables as indices of the environment, focused more on characteristics of the environment such as availability of print materials in the home and frequency of reading.

More recently, the trend is toward direct observation of literate activities within the home. Rather than relying on quantifications of material resources or on parental reports of literacy-related behaviors, researchers have begun to document the variety and scope of literacy events within the home through detailed ethnographic descriptions and microanalysis of parent-child interactions during such events. This changing emphasis is leading to a better understanding of the role of the family in literacy development and how this role varies in different sociocultural communities. It is particularly desirable from an intervention perspective because change can more readily be effected in process variables than in status variables such as parental occupation. The ecological inventory to be described here includes information about these material resources and activities in the homes of our participant families.

A number of researchers have identified a common core of characteristics and experiences in the home that are associated with positive reading outcomes. (For reviews, see Guthrie & Greaney, 1991; Morrow, 1989; Scott-Jones, 1984, 1991; Snow et al., 1991; Sulzby & Teale, 1991; Wigfield & Asher, 1984.) Note that the experiences are not limited to those involving books and other print materials. For example, the oral language environment in which children are raised has direct and indirect effects on reading achievement (Dickinson & McCabe, 1991; Wallat, 1991). A representative list of experiences follows:

1. Books for children are readily available.
2. There is a great deal of print material around the house for adults, including books, magazines, and newspapers.
3. Children are read to regularly.
4. Children see adults reading frequently.
5. Children are provided with space and opportunity for reading.
6. Parents provide reading guidance and encouragement.

7. Children go to the library and check out books regularly.

8. Parents take children on frequent outings.

9. Parents express positive attitudes toward reading.

10. Children and adults engage in frequent conversation.

Although they are informative, studies demonstrating that experiences such as these correlate with reading development leave unanswered important questions about the kinds of literacy experiences children have day-to-day. Anthropological research methods are better-suited to addressing such questions; indeed several ethnographic studies have revealed the variety and scope of the literacy activities in homes of families from diverse sociocultural backgrounds (e.g., Anderson & Stokes, 1984; Taylor & Dorsey-Gaines, 1988; Heath, 1983; Teale, 1984). However, these studies, which require visiting families over an extended period of time, are usually done with small samples. Moreover, they have not examined in detail many of the psychological variables that serve as formative influences on reading acquisition, including the beliefs and values of responsible adults in the child's environment and the processes of adult-child interaction during experiences affording opportunities for literacy learning. The present documentation of children's ecocultural niches will be supplemented in future reports by consideration of these additional variables as well as detailed analyses of children's emergent literacy skills.

Presenting this part of our preliminary results without complementary data might open us to the charge that we are trying to reinvent the wheel. Caldwell and Bradley (1978, 1984) and their colleagues have published research based on a HOME inventory for a number of years that shares certain objectives with our own. Designed to be administered in the course of a single, brief visit to a child's home, the HOME generates a set of ratings of the following psychosocial dimensions: (1) emotional and verbal responsivity of the mother, (2) avoidance of restriction and punishment, (3) organization of physical and temporal environment, (4) provision of appropriate play materials, (5) maternal involvement with the child, and (6) opportunities for variety in daily stimulation.

Each scale represents an aggregate of several dichotomous items, and one of the strengths of the inventory is a high level of interrater reliability. On the other hand, the instrument has been criticized for incorporating a bias toward middle-class American cultural values by scoring for the presence or absence of such variables as the mother's pronunciation, display of the child's artwork, and the choice a child has in selecting lunch or breakfast menus (Dasen & Super, 1988). Items of this type may serve as indicators of the quality of opportunity for a child's cognitive, social, or emotional development, but their significance should be reduced, if not eliminated, once a wider range of sociocultural practices is included.

Unfortunately, the HOME inventory, as is true with many other standardized instruments, retains from pilot versions only those items that

conform to certain psychometric criteria, such as interrater reliability and correlation with scale or factor scores (Serpell, 1987). Moreover, this standardization process was predicated only on middle-class Western values (Caldwell, 1968). Subsequent efforts to validate the inventory with low-income, African American families have been confined to investigating correlations with indices of school achievement and socioeconomic status (e.g., Bradley et al., 1987). A fuller exploration of cultural validity (Serpell, 1979, 1990) would include consideration of dimensions that did not vary enough in the original standardization sample to warrant retention on psychometric or other grounds, and yet may be of great adaptive value to children in ecocultural settings other than those sampled initially. The inventory remains open to the criticism that it may measure acculturation to middle-class norms as much as (or more than) adaptive quality.

We have grounded our analysis of variations in the niches in which children develop in the accounts given by caregivers. Thus, our ecological inventory differs from Caldwell and Bradley's HOME, both in the amount of detailed information that we collect with respect to the particular domain of literacy and in the degree to which our data collection strategy is sensitive to local cultural variation.

Data collection begins with a loosely structured narrative account by the child's primary caregiver of the child's day-by-day activities over the course of a week. Building on the respondent's initial formulation of recurrent activities in this account—or diary—we request further details of their location, timing, and participant structure, and explore the caregiver's interpretation of the significance of each activity for the child's development. As we shall explain further in a future report, the caregiver's socialization goals and beliefs about parental responsibility were reflected in various ways in the contents of these diaries. Rather than asking our informants to react to our preconceived, abstract formulations of such matters, we probed their own interpretation of particular activities that they had already acknowledged to be recurrent in their child's home experience. As the discussion proceeded to explore wider aspects of the caregiver's ethnotheory, communication was thus secured by a grounding in ostensible referents that served as a "bridgehead" (Horton, 1982) of common ground for negotiating a fusion of horizons (Gadamer, 1975) between the perspectives of the caregiver and the interviewer (Serpell, 1990, 1994).

During an initial home visit, the child's primary caregiver is asked to keep either an oral (audiotaped) or written diary documenting the child's activities during the course of a week (e.g., going to the supermarket, going to the park, watching television). We examine this record with particular interest in those activities involving literacy. During a second home visit, an ecological inventory (a term inspired by Baine [1988]) is completed. The inventory is designed to reveal, through follow-up questioning based on the diary, the nature and extent of opportunities for the child to engage in literacy-relevant activities.

A portion of the ecological inventory addresses children's participation in specific activities: games and play activities, meal-time activities, television and radio activities, recur-

rent outings, and reading, writing, or drawing activities. The caregivers are asked to indicate the frequency of their child's participation in each activity as well as the principal co-participants. The activities selected for inclusion have been documented in the literature as significant influences on the development of specific knowledge and competencies associated with early reading. Each activity has the potential to influence one or more of the following domains of development: (1) orientation toward print, (2) general knowledge of the world, (3) narrative competence, and (4) phonological awareness. We will now discuss briefly the significance of these activities and show how they are explored through the ecological inventory.

Orientation toward print. Although all preschool children in American society have at least some exposure to print during the course of their daily lives, the nature and extent of exposure varies. We hypothesized that children whose experiences include more of the ten items listed earlier are more likely to develop an orientation toward print during the preschool years that will help them become literate more rapidly. When children are aware of print in their environment, they come to understand the various functions of print, and they develop an interest in the written word and a motivation to learn to read on their own. The large variations among sociocultural groups in their preparation of children for reading reflect differences in attitudes, values, and definitions of literacy (Mason & Allen, 1986; Wallat, 1991). Thus, not all children come to school with the same orientation toward print.

One early experience that has received a great deal of attention is joint storybook reading. The benefits of reading to children have been well documented, with several investigations showing positive effects of reading to preschoolers on later achievement (Crain-Thoreson & Dale, 1992; Morrow, 1983; Neuman, 1986; Williams & Silva, 1985; Wells, 1986). Accordingly, a section of the inventory focuses directly on children's experiences with joint book reading.

Although storybook reading is widely regarded by educators as an important means by which parents prepare their children for school (Heath, 1983; Wells, 1985), the incidence of the activity varies considerably across sociocultural groups. Ethnographic studies have shown, for example, that joint storybook reading is more common among middle-class families than among working-class families (Anderson & Stokes, 1984; Heath, 1983; Teale, 1986). However, the absence of storybook reading in some homes does not mean that children are growing up without exposure to literate practices. Ethnographic studies have shown that other types of literacy events do occur in the homes of lower-income and minority children, such as reading the mail or looking up a television listing. Although these events may not offer the same advantages as joint storybook reading, they surely contribute to children's development of an orientation toward print. Accordingly, our study explores other types of print-related experiences in addition to the more traditional storybook reading.

Knowledge of the world. Experiences other than contact with print are also given attention in the ecological inventory because of their relevance to reading development. Consider,

for example, home experiences that enrich children's general knowledge of the world. There is ample evidence that prior knowledge is critical to reading comprehension (Anderson, 1978), so the inventory explores children's participation in a variety of activities that have potential for fostering knowledge development. Because television can also serve as a tool for acquiring knowledge, which in turn promotes reading comprehension and interest in reading (Neuman, 1991; Reinking & Wu, 1990), the inventory explores children's television viewing habits. Children also acquire knowledge of the world through first-hand experience. The variety of experiences to which children are exposed by their families plays an important role in expanding their knowledge base. Several studies have shown that children whose families provide them with rich and varied experiences have higher levels of reading achievement (Crain-Thoreson & Dale, 1992; Snow et al., 1991; Williams & Silva, 1985). Accordingly, one section of the inventory focuses on recurrent outings, including trips to stores and libraries, visits with friends and relatives, and participation in organized activities. Play also affords opportunities for enriching children's knowledge of the world; the inventory explores children's play with board games, educational toys, electronic games, and pretend play.

Narrative competence. Also important are home experiences that foster narrative competence, including knowledge of narrative structure and function. Narratives are an important genre in which language expresses ideas in a coherently organized fashion. Full literacy in contemporary American culture involves the capacity to retrieve such organized information from a continuous narrative text. Most of the print materials children encounter in the early years of schooling are stories or narratives, and there is ample evidence that children understand material better when it is presented in a familiar structural and stylistic format. Reading stories to children will foster this familiarity, as will oral storytelling and certain kinds of television programs (Doiron & Shapiro, 1988; Gee, 1989). Narrative competence is also fostered through oral communication, as children listen to personal narratives and produce their own (Heath, 1983; Miller, Potts, Fung, Hoogstra, & Mintz, 1990). Accordingly, the inventory explores not only children's experiences with books and television but also their experiences with oral storytelling and participation in mealtime conversation.

Phonological awareness. Oral language experiences are also important in promoting metalinguistic awareness, that is, the ability to reflect on language (Mason & Allen, 1986; Pellegrini, 1985; Sulzby & Teale, 1991; Wells, 1986). Much attention has been devoted to metalinguistic awareness at the phonemic level because of the substantial literature documenting a relation between phonemic awareness and reading achievement. Bryant, Bradley, Maclean, and Crossland (1989) found a strong relationship between knowledge of nursery rhymes at age three and success in reading and spelling over the next three years, a relation that appears to be mediated by the higher levels of phonemic awareness that are fostered by exposure to rhymes. Accordingly, the inventory explores children's participation in activities that may entail exposure to rhyme, such as

word games, hand-clapping games, singing, and listening to music.

Our exploration of the contexts for literacy acquisition is broadly based. Accordingly, we named our project the "Early Childhood Project" and characterized it as an investigation of factors affecting children's transition from home to school. Thus, we can begin our interactions with caregivers, many of whom have limited schooling and may feel uneasy in the domain of literacy, without mentioning literacy as such. Our questioning about home resources, recurrent activities, and caregiver beliefs thus takes place in the context of a broad range of questions about cognitive, emotional, moral, and social development.

METHOD

Participants

Selection of schools and neighborhoods. Participants were drawn from the residential neighborhoods served by six public elementary schools in Baltimore, Maryland. One of the salient sociocultural characteristics of the city is a high level of *de facto* residential segregation between the African American and European American segments of the population. This division is reflected in our sampling frame.

The Baltimore public school system publishes an annual report containing profiles of each school, including the proportional representation of White and non-White students over the past five years and the mean grade equivalents achieved by each grade on the California Achievement Tests (CAT) of Reading and Mathematics (Baltimore City Public Schools, 1990). Complementary data on the same schools were published for the first time in 1990 by the Citizen's Planning and Housing Association and include the proportion of students in each school at each grade level scoring above the national median on each of those tests. In addition, the Baltimore City Public Schools Administration made available to us their computerized data on the proportion of students in each grade at each school qualifying to receive free lunch, an index of their family's income. Through analysis of these data, we generated four lists of schools, each fitting one of the following sets of criteria:

1. Low-income, African American: student population 86% or more African American and 86% or more qualifying for free lunch.

2. Low-income, European American: student population over the past three years 75% or more European American and 75% or more qualifying for free lunch.

3. Low-income, mixed ethnicity: student population over the past three years ranging between 33% and 66% African American, the remainder being European American and 75% or more qualifying for free lunch.

4. Middle-income, mixed ethnicity: student population over the past three years ranging between 33% and 66% African American, the remainder being European American and 60% or more paying for lunch.

(In groups 3 and 4, the criteria also stipulated that there be no more than a 15% difference between the ethnic groups in rate of qualifying for free lunch or paying for lunch.)

Two schools were selected as having profiles 1 and 2 but these were located in different neighborhoods. One each was selected with profiles 3 and 4. Schools were excluded from consideration as research sites if they were involved in other ongoing major research or intervention projects or if the principal expressed a reluctance to participate when approached. All schools in the lower-income neighborhoods were receiving Chapter 1 services.

Recruitment of families. We worked hard to plan an effective recruitment strategy because we knew how difficult it can be to secure the participation of inner-city families. For example, because we believed that some parents might have limited literacy skills and would not respond to a letter sent home from school with their child, we set up opportunities for face-to-face contact. In addition, because we believed that some of the prospective participants might feel more comfortable learning about the project from someone of similar ethnicity, we arranged for African American graduate research assistants to make recruitment visits to the predominantly African American schools and for White graduate research assistants to visit the predominantly European American schools.

The investigators met with the pre-kindergarten teachers at the six schools to talk with them about the project and to enlist their assistance in recruiting families. Working with the teachers, we generated a list of children eligible to participate in the project, a list based on the following sampling criteria and balance considerations:

1. Each child should have an older sibling living at home.

2. There should be equal numbers of male and female participants from each school.

3. There should be equal numbers of African American and European American children from the balanced-ethnicity schools, and in schools that are predominantly one ethnicity, all children should be of that ethnicity.

4. Children should not have any identifiable developmental disabilities.

5. The economic status of the child's family should be comparable to that of the majority of the families served by the school (as indexed by lunch ticket status).

6. Children should live within the official geographic boundaries for attending the school.

The rationale for these criteria should be obvious, with the exception of the first. We decided to select only later-born children in order to limit the variance in home environments with respect to caregiver knowledge, experience, and attention. This selection criterion also afforded us the opportunity to explore

the influences of older siblings on a child's appropriation of literacy.

Recruitment proceeded in a variety of ways. Brief letters were first sent home with the focal children (12 to 16 at each school) informing parents that their child had been selected for participation in the Early Childhood Project and inviting them to meet with us at the school to learn more about the project. Informal meetings were held at each school when caregivers dropped their children off for school or when they picked them up. In addition, we arranged to be at the pre-kindergarten classrooms on several other occasions. The teachers introduced us to the caregivers of focal children, and we gave them some general information about the project. Follow-up appointments were arranged with those parents who expressed interest in learning more about the project or who agreed to participate.

Description of the sample. The initial recruitment process took place during a three-month period beginning in January, 1993. We approached 84 families altogether, and 43 families agreed to participate. All 43 families began keeping the diary of their child's activities, but four decided before completion of the diary that they did not wish to remain in the project. Because of this attrition, we recruited two additional families from one of the lower-income, European American neighborhoods in the fall of 1993; the focal children were enrolled in kindergarten classes with the other children in the sample who had been recruited earlier in the year. The data to be reported in this paper are based on a total of 41 families.

All of the focal children were born in 1988 and were therefore eligible to begin kindergarten in 1993-94. Although kindergarten attendance is mandatory in the state of Maryland, pre-kindergarten attendance is optional; it is not even available in all schools. However, approximately 90% of the Baltimore public schools have pre-kindergarten programs, most of which are federally funded. It is possible that caregivers who send their child to pre-kindergarten may differ in systematic ways from those who do not. Similarly, caregivers who participate in this project may differ in systematic ways from those who do not.

Table 1 shows the distribution of participants by neighborhood type, school, and gender. The table also shows the mean ages of the mothers participating in the study as well as the number of years of schooling they had completed. The middle-income mothers were significantly older [$F(1,29) = 4.28, p < .05$] and better-educated [$F(1,29) = 8.80, p < .01$] than the lower-income mothers.

Materials

The instrument used to record information about children's everyday experiences and the characteristics of the in home niches is referred to as the *ecological inventory form*. A copy of this form is included in Appendix A. The instrument was developed through pilot testing with families in Baltimore whose sociocultural profiles were similar to those in our sample. Our primary unit of analysis is a culturally defined recurrent activity in which the focal child participates.

The inventory is organized into five types of activity: games and play activities, mealtime activities, television and radio activities,

Table 1. Demographic Information About Participants

	Participants					
Neighborhood	***N***	**Male**	**Female**	**Number of Single-Parent Households**	**Mothers' Age (*M*)**	**Mothers' Education (*M* years)**
African American, Lower-Income				4	29.8 (*SD* = 4.29)	11.13 (*SD* = 2.10)
(School 1)	4	3	1			
(School 2)	6	2	4			
European American, Lower-Income				6	27.9 (*SD* = 4.95)	9.5 (*SD* = 2.10)
(School 1)	8	3	5			
(School 2)	5	1	4			
Mixed-Ethnicity, Lower-Income*	8	3	5	4	31.0 (*SD* = 6.26)	10.13 (*SD* = 1.96)
Mixed-Ethnicity, Middle-Income**	10	6	4	3	34.3 (*SD* = 5.65)	12.57 (*SD* = 0.53)

*4 African American, 4 European American

**4 African American—one family has twin sons participating in the project, 6 European American

recurrent outings, and reading, writing, and drawing activities. We began interviews whenever possible with an example from one of the categories taken from the caregiver's diary. We then asked about each of a precoded set of subcategories (activities) that are directly or indirectly relevant to emergent literacy. For each activity we asked how often the child engaged in it, who the principal co-participants were, and what items were used. Also included was a checklist for noting the artifacts present in the child's niche that are relevant to literacy. These include such things as books, magazines, pencils, computers, and telephones. Additionally, the inventory includes a section for describing the physical characteristics of the house and environs (e.g., numbers of rooms, presence or absence of outdoor play areas, etc.).

Procedure

In this section, we describe the procedures used for acquiring information from the caregivers about their children's everyday experiences. We begin, however, by specifying some procedures and guidelines we followed for working with the families.

Guidelines. In order to build rapport with the families, each family was seen by the same graduate research assistant on each visit. In most cases, the "responsible" research assistant was the one who made the initial contact at

school. Thus, each research assistant had responsibility for families in a particular neighborhood. There was one research assistant in each of the four schools that were predominantly of one ethnicity. Two research assistants served each of the mixed-ethnicity schools. For all but four families, the research assistant was of the same ethnicity as the caregiver. The exception occurred in the middle-income, mixed-ethnicity neighborhood, where neither of the two responsible research assistants was African American. However, a second member of the research team, usually an undergraduate assistant, accompanied the primary research assistant on all visits with the families. In the case of the four African American families in the middle-income neighborhood, the accompanying home visitor was African American. Thus, at least one member of the visiting team was of the same ethnic background as the family. Three of the graduate research assistants were European American, one was Cuban American, one was African American, and two were African. Six of the graduate research assistants were female; one was male. The male research assistant was accompanied by a female on the home visits. (On a few occasions, these guidelines were not followed. For example, last-minute scheduling problems led one primary research assistant to visit the caregiver alone rather than in the company of a second member of the team.)

Each of the three principal investigators had primary responsibility for overseeing the project activities at two sites and worked closely with the primary research assistant in their contacts with the families. The full research team met weekly to review progress, ensure that procedures were standardized through group training and role playing, and discuss special circumstances.

Visit 1: Introduction and Diary Instructions. The purpose of the first visit with the caregiver was to describe the study in more detail, to obtain informed consent, to collect demographic information about the family, and to explain the procedure for keeping a diary. When the appointment was made, the parents were asked whether they preferred to meet in the family's home, the child's school, or a neutral location in the neighborhood. Approximately 75% of the parents chose to meet in their homes; the remainder chose to meet at the school. During the initial visit, research assistants first explained the research project and answered questions. Informed consent was obtained from the participants. Demographic information was also obtained from the caregivers and was entered onto a standard form by the research assistant. The information included the focal child's birthdate, the names, birthdates, and relationships of other children living in the home, the names and relationships of other adults living in the home, and the names of any others in the neighborhood that were significant to the child. (Additional demographic information pertaining to parental age, occupation, and education was obtained during a fourth visit with the caregivers in the fall of 1993. We intentionally delayed asking for this information until some degree of rapport had been established with the families.)

The diary was described to the caregivers as a record of the focal child's life. Caregivers were instructed to report each activity the child engaged in, and to note who else participated, what materials were used (e.g., type of toy), and how long the activity lasted. By the use of

informal examples, research assistants illustrated what kinds of information might be pertinent. Caregivers also received a chronologically ordered list of potential activities to use as a guide in conceptualizing the diary. The list included the activities associated with getting up, eating breakfast, spending the morning, having lunch, spending the afternoon, eating dinner, spending the evening, and getting ready for bed. The list was accompanied by a reminder to focus on the principal participants, materials used, and duration of activity. Research assistants reiterated that the list was meant only as a basic framework and that the activities occurring around those times were of primary interest, as opposed to the event itself (e.g., helping to prepare dinner as opposed to actually eating the meal).

Caregivers were told that the diary was to be kept for one full week, ideally on seven consecutive days. However, pilot work revealed the desirability of giving caregivers the option of spreading out their record keeping over more than one week to help ensure complete and accurate reporting of activities for each of the seven days. Thus, if caregivers were unable to report the child's activities on a given day, they could report what they did on the same day the following week.

Once the instructions were given and questions were answered, caregivers were invited to tell the research assistant about the child's activities on the previous day in order to familiarize them with the procedure. They were given feedback and encouragement and were questioned if a description of an activity was ambiguous or sketchy.

Caregivers were asked if they preferred to keep their diary by speaking into an audiocassette recorder or by writing in a notebook. The option to record was included for the benefit of parents who might feel uncomfortable about their literacy skills or who might find it less burdensome than writing. Pilot testing with mothers in the same sociocultural groups indicated that both record-keeping options were feasible and that different caregivers preferred different options. Among the caregivers who completed the diary, 32 chose the written mode and 9 the audio mode. A spiral notebook was left with the parents who chose the former option; a small tape recorder and tape were left with those who chose the latter. All those who selected the audio mode were African American, some from lower-income and some from middle-income communities. One mother who began keeping her diary on tape decided to switch to the written mode after the tape recorder was stolen from her home.

At the conclusion of the first visit, which lasted approximately 45 minutes, the research assistant arranged to contact the caregiver the day after beginning the diary to answer any questions that may have arisen. At this follow-up contact, the caregiver was asked to read or play back the first day's recorded activities. The purpose of this contact was to ensure that the caregiver understood and was adhering to the instructions. Encouragement and appropriate feedback were given to the caregiver. This contact was handled with a telephone call for those families either with telephones or with access to one. However, for those families without telephones, a brief meeting in the school or at home was arranged. At the conclusion of the conversation, the date for the diary to be picked up was arranged. A few families

were unavailable for the follow-up contact, and they kept their diaries without further feedback from the research team. Diary pick-up was brief and informal.

Preparation for Visit 2. Audiotaped diaries were first transcribed verbatim. The research assistant read through the diary or the transcript carefully. All activities mentioned were underlined or highlighted, as were the names of participants in the activity. Those activities that fit into the categories on the ecological inventory form were noted and taken to the next interview. The caregiver's own words were used in the descriptions of the activities. Any statements that were ambiguous or unclear were noted for follow-up questioning. The research assistant then met with the principal investigator responsible for the child's school to go through the diary again and review the decisions the research assistant had made about activities to enter onto the inventory form and follow-up questions to ask.

Visit 2: Completion of the Ecological Inventory. The purpose of the second visit was twofold: (1) to complete the ecological inventory based on the information provided in the diary and on follow-up questioning of the caregiver; and (2) to begin to explore the caregiver's ethnotheory (not a subject of the present report). We had hoped that the second visit could take place within a few weeks of diary completion so the activities described in the diary would be relatively fresh in the caregiver's mind if further questioning was necessary. For 26 families, the interval was three weeks or less. However, scheduling problems with the other families meant that sometimes the interval was as long as seven weeks. It was often difficult to contact the caregivers, 10 of whom did not have telephones. In other cases, the caregivers agreed to an appointment time and either were not home at the time or informed the research assistant on arrival that the time was not convenient after all and that a new appointment must be scheduled.

During the visit, the research assistant went through the inventory form systematically with the caregiver. First, the games and play activities mentioned in the diary and transposed onto the form in advance were read to the caregiver. Any clarification needed about these activities was obtained at this time. The caregiver was then asked to describe other ways in which his or her child played frequently at home, in the family, or in the neighborhood. Any information obtained through this questioning was added under Section 2 on the inventory form.

The caregiver was then asked how often and with whom the child engaged in specific game-related activities deemed relevant to emergent literacy. These activities appeared as a checklist in Section 3 of the inventory form. The frequency estimates for each activity were obtained and recorded using a 4-point scale, ranging from "never, not at all" to "very often, i.e., almost every day." Information about the co-participants was obtained and recorded according to the age range of the others involved. Coding categories were 1 = young child (the principal co-participants were children the same age or younger than the focal child); 2 = older child (the co-participants were older children regarded by the caregiver as being in a position to provide some guidance to the focal child's participation in the activity;

3 = adult (the principal co-participants are considered adults by the caregiver); 4 = alone (the child did not engage in the activity with others); and 5 = combination (the ages of the co-participants vary). Caregivers were asked to give an example of a specific activity in each category if it had not been provided spontaneously in the diary or elicited in the previous questioning (e.g., the name of a board game the child played).

Each activity category of the ecological inventory was completed in essentially the same manner as the play-related activities (i.e., review the activities from the diary, ask if any other activities occurred, document the frequency and co-participants of specified activities). Additional questions on the inventory form were asked and answers recorded (e.g., questions dealing with specific aspects of the child's interaction with video and audio media).

In order to ensure that all information provided by the caregiver was captured, the interview was audiotaped with the caregiver's permission. The interviewer recorded information on the inventory form during the visit. The inventory was later annotated as was appropriate, based on supplementary information obtained from listening to the audiotape.

The interviews with the caregivers lasted from 45 minutes to two hours; the average was one hour. (The final 15 minutes or so were devoted to preliminary questioning about the ethnotheory interview, which will not be discussed here.) Caregivers were given $25 as a token of appreciation for their participation in the project at the close of this visit.

RESULTS

We begin this section with a description of the diaries provided by the caregivers in the project. We then describe the major findings regarding children's early literacy-related experiences revealed by the ecological inventories, first with respect to frequency of participation in all of the specified activities, then with respect to participation in those activities judged most likely to contribute to development in the four dimensions of early literacy development outlined earlier: orientation toward print, narrative competence, knowledge of the world, and phonological awareness. In the final section, we report an analysis of children's print-related experiences that parents spontaneously wrote about in their diaries. We used a coding scheme devised for this purpose.

Descriptive Aspects of the Diaries

There was striking variation in the style, content, and length of the diaries. Some were very short and gave a very incomplete portrait of the child's activities, whereas others were quite informative not only with respect to activities but also with respect to beliefs, values, and interpretations. Some were written as unelaborated lists of activities, whereas others were written in well-developed sentences and paragraphs. Finally, some contained many errors of grammatical structure, spelling, and punctuation, whereas others were technically well written.

The lengths of the diaries varied considerably as did the approach taken in preparing them. As a gross indicator of length, we exam-

ined the number of lines of text written in the notebooks. A mother from one of the lower-income, European American neighborhoods made the shortest entries, averaging 12 lines per day. A mother from the other lower-income, European American neighborhood made the longest entries, averaging 104 lines per day. The mode was about 24–36 lines per day, or one and one-half notebook pages. The organizational structure of the diaries varied, although almost all were chronological in that they described events happening earlier in the day before events happening later. Some, however, indicated explicitly the time of day that activities occurred (i.e., 8 AM, 7:15 PM), and others gave general headings comparable to those we suggested (i.e., morning activities, bedtime activities). The entries for each day were usually written at one sitting, although some of the caregivers made entries throughout the day.

Next, we present some diary excerpts that illustrate the variations and the flavor of the data collected. At one extreme, a mother from a low-income predominantly European American neighborhood described her son's day as follows:

> [focal child] help me wash cloth when he went outside to play baseball ride bike. He play all day with his friend. Ate supper went outside again. Came in got bath went to bed.

This lack of detail was not limited to the lower-income families. For example, a European American mother from the middle-income, mixed-ethnicity neighborhood made the following list-like entry:

> I woke [focal child]
> ate breakfast
> Brushed teeth
> Got dressed
> school
> Went to the grocery store
> met Aunt Mary for lunch
> Went shopping
> 3:00 home
> Cartoons w/ [sister]
> fell asleep
> 6:00p Dinner
> played w/ [brother]
> Read some books w/ [older sister]
> snack
> teeth
> Bed

In striking contrast, some of the parents were quite detailed and insightful when discussing the child's day. This African American mother from the low-income, racially-mixed community wrote the diary from her child's perspective:

> . . . At 10:30 AM my mom got me ready for school I put on my clothes and my favorite basketball shoes. While mom was putting on her clothes I was down stair playing cards. At 11:15 AM mom took me to school were I ate lunch . . . .
>
> . . . School let out at 2:30 PM and I got home at 2:40. I got in and showed

> my mother the picture that I had painted for her in school. She said that she love it. Then I went down stair and look at cartoon and was tried to put the puzzle together with my sister. I road my bike in the house . . . .

A different mother from a low-income, European American neighborhood not only reported the activities her child engaged in, but also gave some explanation for her daughter's motivations and feelings:

> [focal child] got up about 6:30 she came in are room we all disided we wanted donuts so we let [focal child] run to the corner store witch we don't do often. So it gave her a feeling like she was getting the same treatment [her older sister] is getting. We had breakfast in the bedroom . . . .
>
> . . . Sometime while she's playing with the baby and her toys I think she must be day-dreaming or remember or that pretending that she is a baby to. But most of the time during the day she want to be grow up. Everytime me and my husband has conversation she wants to get into it. We tell her it's for grown up she wants to get involved in it. Then at about 8:00 o'clock her and her father was at nintendo already this morning . . . .

An African American parent from the low-income, ethnically-mixed area wrote about her son's afternoon and evening:

> 12:00 [focal child] and I went to the job bank at unemployment had lunch from venders cart. He wanted to know how they got the stoves and ice boxes in the trucks. We had hot dogs and Pepsi.
>
> 2:00 Playtime [focal child] drew two pictures one of his family the other a bunch of worms.
>
> 2:30 [older brother] and [other older brother] home after the two older brothers do homework they all play together school, cars, simon says . . . .
>
> 6:00P [focal child] and [older brother] played store together they used a toy cash register. [focal child] is able to push several numbers he just can't get the hang of the money yet . . . .

One parent from a low-income, African American area wrote the following:

> . . . At the dinner table, [focal child] was very irritable because he couldn't watch television during dinner. After he finished eating, [focal child] cleaned off his area, excused himself from the table. At this time it was time for bible study, [focal child] studied his work, practiced writing his name, practiced reading, and practices saying his numbers from 1 to 40.

> After that [focal child] prepared to go to bed. He went to the bathroom, he washed his face and hands and brushed his teeth, put on his pajamas, said his prayers and then he went to bed.

As noted earlier, approximately 25% of the caregivers (nine) audiotaped their diaries. The audiotaped diaries also varied considerably in length, style, detail, and insightfulness. One of the diaries was more than 30 minutes long and yielded 7 pages of typed transcript, while another was less than 5 minutes long. Some of these diaries were organized around the time of day; some were recorded at different times throughout the day; some were recorded by more than one of the caregivers. One African American mother from the low-income, ethnically-mixed neighborhood took the unexpected approach of having her daughter (the focal child) tell about her day, which resulted in a diary that was only minimally useful. On the first day, the child reported:

> My name is [focal child]. When I woke up, my mommy did my hair and her uh her and her umm me got something top to eat. And when I did my hair I got my sweater on then I went over to my cousin house and then when I came back I came in the house and then I went outside then I came back in the house. I'm done mom.

In contrast, a mother from one of the predominantly African American neighborhoods recorded one of the most detailed diaries. In the following excerpt, she not only documented the activities of a particular evening, she also offered comments about the habitual activities of her daughter:

> About 6:00, [focal child] is sitting down and eating her dinner. Between 7 and 7:30 she dos her other little things before it's time for her to go to bed. She takes her clothes off, put her night clothes on. She might play with her dolls for the rest of the night. And about 8, 8:30, [focal child] gets washed up for school tomorrow. And she settles down by 9:00 and she goes to bed. She's still not asleep. Because her and her brother have to ask all these questions backwards and forwards, backwards and forward. Usually, when they do all that, I usually go in there and sit down and read them books. She likes to read "The Little Mermaid" and he likes Ninja Turtle books, so I reads them both stories before they go to bed sometimes. And after that she hug me, kiss me, ask me is there school tomorrow, is her cousin [name] coming up. And I tell her, "Yes, have a good night and I see you in the morning."

As can be seen from these brief examples, the diary procedure elicited a range of responses from the caregivers. Some diaries had to be carefully scrutinized to obtain sufficient information to use as prompts in conducting the subsequent interview. Even in these cases, we managed to obtain enough information from

the caregivers to allow the interview to begin on a common ground. At the other extreme, some diaries succeeded in portraying a fairly coherent picture of the child's everyday life. At times, the descriptions of these children's lives were rich and insightful.

Frequency of Participation in Activities Relevant to Literacy Development

The ecological inventory was designed to reveal the nature of the everyday resources and opportunities available to children outside of school. Both the diary and the follow-up interview at which the inventory form was completed contribute to this data base. We begin by reporting the frequency data recorded in Section 3 of the inventory form for the various activity categories. Recall that a standard list of activities was included on this section of the inventory form, and caregivers were asked to indicate the frequency of their child's participation in each activity. Frequency ratings were 0 = never, 1 = rarely—less than once a week, 2 = occasionally—at least once a week, and 3 = often—every day or almost every day. Table 2 presents the mean frequency ratings provided by caregivers for each of the activities. The first column shows the mean rating for all participants, and the other columns show the means obtained in two planned comparisons. One analysis compared the ratings of the families in the middle-income neighborhood with those of the families in the four lower-income neighborhoods. The second analysis compared the ratings of the families in the two homogeneous European American, lower-income neighborhoods with those of the families in the two homogeneous African American, lower-income neighborhoods. We will consider in turn each of the major headings in the table and the activities they contain.

Few statistically significant differences were found between the middle-income and lower-income families and between the lower-income, African American and European American families in how frequently children engaged in specific activities. This may reflect the fact that our sample size was small, with only 10 children in the middle-income group. However, we did not expect to find differences as a function of these social address variables. We analyzed and report the data this way for the sake of comparison with existing findings. Our primary analytic strategy in the project is to examine the patterns of relations among the home experiences of individual children and other data we are collecting (e.g., children's emerging competencies, parental beliefs, and processes of dyadic interaction). Because this is a longitudinal study and all of the data are not yet collected or analyzed, we do not explore these relations in the present report.

Games and play activities. No statistically significant differences were found in the frequency ratings for games and play activities. Parents of all sociocultural groups reported high frequencies of pretend play and singing, with mean ratings of 2.35 and 2.44, respectively (with a maximum of 3). Word games, hand-clapping games, and board games were relatively infrequent across all groups. Storytelling and play with educational toys occurred somewhat more frequently, but still less than once a week on average.

Table 2. Mean Ratings Given by Caregivers for Childrens' Frequency of Participation in Activities in the Ecological Inventory Questionnaire

		Type of Comparison			
	Overall Mean (with *SD*)	Income Level		Ethnicity (low-income)	
		Lower	Middle	Euro. Am.	Afr. Am.
Type of Activity	(*N* = 41)	(*n* = 31)	(*n* = 10)	(*n* = 13)	(*n* = 10)
Games and Play Activities					
Pretend play	2.35 (0.98)	2.20	2.80	2.15	2.44
Storytelling	1.50 (1.15)	1.47	1.60	1.46	2.00
Word games	0.83 (1.04)	0.77	1.00	0.62	0.70
Hand-clapping games	1.02 (1.11)	1.10	0.80	1.00	1.00
Singing	2.44 (0.78)	2.48	2.30	2.54	2.90
Board games	0.93 (0.94)	0.93	0.90	1.08	0.67
Educational toys	1.51 (1.14)	1.41	1.80	1.17	2.00
Mealtime Activities					
Food preparation	1.85 (1.01)	1.74	2.20	2.15	1.50
Refrigerator displays	1.30 (1.29)	1.37	1.10	1.33	1.90
Conversation	2.32 (1.17)	2.45	1.90	2.54	2.50
Television	1.27 (1.34)	1.36	1.00	0.85	1.90
Television, Video, or Music Activities					
Watches cartoons	2.59 (0.89)	2.68	2.30	2.77	2.80
Watches situation comedies	1.93 (1.08)	2.10	1.40	2.00	2.30
Watches educational shows	2.10 (0.94)	2.03	2.30	2.31	1.80
Watches game shows	0.98 (1.25)	1.10	0.60	0.62	1.90*
Watches dramas, movies	1.34 (1.17)	1.45	1.00	1.23	2.00
Watches sports	0.83 (0.95)	0.90	0.60	0.39	1.90*
Watches news	0.95 (1.16)	1.06	0.80	0.37	1.79*
Watches music shows	1.03 (1.05)	1.03	1.00	0.77	1.22
Listens to music	2.59 (0.81)	2.65	2.40	2.85	2.80
Watches VCR	1.92 (1.14)	2.07	1.33	2.42	1.78
Recurrent Outings					
Visiting people	2.02 (0.91)	2.07	1.90	2.39	1.70
Shopping	1.71 (0.75)	1.81	1.40	2.08	1.40*
Running errands	1.37 (1.02)	1.23	1.80	1.08	1.60
Going to library	0.68 (0.69)	0.60	0.90	0.92	0.56
Taking lessons or classes	0.63 (0.93)	0.53	0.90	0.46	0.56

Table 2. (continued)

Type of Activity	Overall Mean (with *SD*) (N = 41)	Type of Comparison: Income Level Lower (n = 31)	Income Level Middle (n = 10)	Ethnicity (low-income) Euro. Am. (n = 13)	Ethnicity (low-income) Afr. Am. (n = 10)
Reading, Writing, or Drawing Activities			*M*		
Looks at preschool books	1.25 (1.10)	1.10	1.80	0.85	1.89*
Looks at picture books	0.68 (1.11)	0.57	1.10	0.39	1.33*
Looks at storybooks	2.39 (0.83)	2.26	2.80	2.46	2.20
Looks at nonfiction	0.68 (1.11)	0.53	1.20	0.50	0.60
Looks at other print material	1.24 (0.99)	1.13	1.70	1.31	1.00
Draws	2.38 (0.78)	2.41	2.29	2.22	2.83
Writes	2.39 (0.96)	2.35	2.43	2.00	3.00
Looks at books on own	1.75 (1.08)	1.86	1.29	2.00	2.11
Availability of Equipment in Home			**% of "yes" responses**		
Television		94	89	100	80
VCR		65	80	85	50
Radio		60	70	100	20*
Record player		30	60	50	30
Compact disk player		10	50	25	00
Cassette player		50	50	75	10*
Other Questions about Child's Activities			**% of "yes" responses**		
Child sings with Television?		100	100	100	100
Has favorite video?		84	89	100	80
Plays Nintendo?		77	80	85	60

Note: The means reported in the four right columns reflect the means used in two planned comparisons. In the first analysis, the data for the middle-income families were compared with the data for the lower-income families. This involved comparing the one heterogeneous middle-income community with the four homogeneous and one heterogeneous lower-income communities. In the second analysis, the lower-income families from the two homogeneous European American communities were compared with the lower-income families from the two homogeneous African American communities.

*Comparisons of the two means immediately to the left of the asterisk were significant at $p < .05$.

Mealtime activities. No statistically significant differences were found in the frequency ratings for mealtime activities. Parents of all sociocultural groups reported frequent participation in mealtime conversation ($M = 2.32$). None of the other activities received overall mean ratings above 2.0 (at least once a week).

Television, video, or music activities. Differences among the sociocultural groups were most salient with respect to television viewing habits. Parental ratings indicated that children from the lower-income, African American communities more frequently watched game shows, $F(1,21) = 6.53$, $p < .02$, sports, $F(1,21) = 19.50$, $p < .001$, and news and documentaries, $F(1,21) = 15.30$, $p < .001$, than did children from the lower-income, European American communities. It is not clear whether these differences reflect differences in the overall amount of television watching that occurs among the African American families or differences in viewing preferences and/or parental support of more varied fare.

Of all the activities included in the inventory, the two that received the highest overall frequency ratings were in the entertainment category. Watching cartoons and listening to music were tied at a mean of 2.59. Television was present in all but two of the homes; these two were in the lower-income, African American neighborhoods. In order to get a better understanding of the overall frequency of television watching, the data were reconsidered by comparing the number of parents who reported that their children watched at least one type of program every day or almost every day (that is, they gave a rating of 3 to at least one type of show) with those who did not give any ratings of 3. Chi-square analyses revealed differences as a function of income level, with more lower-income parents giving at least one 3 rating (89%) than middle-income parents (50%), $\chi^2(1) = 6.81$, $p < .01$. There were no differences between the lower-income groups, with 100% of the European American families and 80% of the African American families giving at least one rating of 3.

Recurrent outings. None of the activities included in the outings category occurred with great frequency; only one activity—visiting people—had a mean rating above 2.0 (at least once a week, $M = 2.02$). Planned comparisons revealed one statistically significant effect: lower-income, European American parents gave higher mean frequency ratings for shopping than did lower-income, African American parents, $F(1,21) = 5.83$, $p < .03$.

One activity in the outings category deserves special attention: the frequency ratings given by parents in all sociocultural groups for library attendance were extremely low ($M = 0.68$). However, because books can be checked out of the library and brought home for a period of several weeks, it is not necessary to go to the library frequently to reap the benefits of the visit (recall that a rating of 1 simply indicates that the activity happens less than once a week). Therefore, the data in this category were reconsidered by comparing the number of parents who indicated that their child never goes to the library with those who indicated that their child does go to the library. Chi-square analyses revealed a significant difference between the middle-income families and the lower income-families. Ninety percent of the middle-income families reported that their child visited the library, whereas 43% of the lower-income families did so, $\chi^2(1) = 6.60$,

$p < .01$. The difference between the lower-income groups was not significant (69% for the European American families and 33% for the African American families).

Reading, writing, and drawing activities. Children's experiences with books varied considerably, depending on the type of book in question. Children in all sociocultural groups had frequent experiences with storybooks; the overall mean rating was 2.39. None of the other types of books had mean frequency ratings above 2.0. However, planned comparisons revealed that the children from the lower-income, African American neighborhoods had more frequent experiences with preschool books (e.g., alphabet books) and picture books (e.g., books without a printed story) than did children from the lower-income, European American neighborhoods, $F(1, 20) = 4.70, p < .05$.

The activity ratings in Table 2 do not indicate whether a child had interaction with *any* books on a daily basis. Accordingly, the data were reconsidered by comparing the number of parents who reported that their child interacted with at least one type of book every day or almost every day (that is, they gave a rating of 3 to at least one type of book) with those who did not give any ratings of 3. These data revealed differences as a function of income level; 90% of the middle-income parents reported daily book-reading activity, while 52% of the lower income parents did so, $\chi^2 (1) = 4.60, p < .05$. There were no differences between the lower-income groups, with 50% of the European American families and 68% of the African American families indicating at least some daily book reading. (Recall that the lower-income, mixed ethnicity neighborhood families are not included in the ethnic group comparison, but they are included in the income level comparison; this accounts for what appears to be a discrepancy in the data.)

Writing and drawing also occurred with high frequency among all sociocultural groups. The mean overall ratings were 2.39 and 2.38, respectively. Even at this early age, children were beginning to look at books on their own, with a mean frequency rating of 1.75.

Experiences Relevant to Four Dimensions of Literacy Development

As noted in the introduction, the activities included in the ecological inventory were selected because of their potential relevance for literacy development. Based on a review of the literature, we identified four domains that are particularly likely to be influenced by a child's home experiences: orientation toward print, knowledge of the world, narrative competence, and phonological awareness. In order to generate theoretical consensus, each of the activities included in the inventory was rated as to its likely impact on each of the four domains using a 4-point rating scale: 0 = not likely; 1 = somewhat likely, but only in some specific situations; 2 = somewhat likely, in most instances; and 3 = very likely. Eleven members of the research team completed the scale. Activities that received a mean rating of 2.5 or greater on a particular domain or that were rated 3 by six or more members of the team were selected as influential on that domain. Table 3 shows the activities identified as most influential on each domain. Note that there is overlap across the categories, reflecting the fact that some activi-

Table 3. Ecological Inventory Activities Rated Most Likely to Influence Dimensions of Development Related to Literacy

Orientation Toward Print:
Educational television watching
Visits to the library
Preschool book reading
Picture book reading
Storybook reading
Nonfiction book reading
Reading other print materials
Looking at books independently
Writing
Knowledge of the World:
Mealtime television watching
Mealtime conversation
Visits to the library
Educational television watching
News television watching
Storybook reading
Nonfiction book reading
Narrative Competence:
Oral storytelling
Mealtime conversation
Storybook reading
Phonological Awareness:
Word games
Hand-clapping games
Singing
Preschool book reading
Storybook reading
Nonfiction book reading

ties contribute to development in more than one domain. Storybook reading, for example, appears in all four categories, consistent with evidence in the literature that storybook reading influences many facets of emergent literacy.

The frequency data provided by the caregivers for the activities on the ecological inventory were reanalyzed by constructing a composite score for each of the four domains. Thus, for example, a frequency rating for narrative competence was obtained by summing the ratings for the three activities in that domain (storytelling, mealtime conversation, and storybook reading) and dividing by three. The composite data were analyzed with two planned comparisons: (1) middle-income families as compared to lower-income families; and (2) lower-income, European American families from the two homogenous neighborhoods as compared to the lower-income, African American families from the two homogeneous neighborhoods. None of the planned comparisons yielded significant effects, although there was a trend for the middle-income children to have more frequent opportunities for developing an orientation toward print than the lower-income children, $F(1,38) = 3.84$, $p < .06$. This is consistent with the evidence presented earlier that middle-income children more often have daily experiences with books and are more likely to visit the library. The relevant data are presented in Table 4. The absence of large group differences on these indices is not surprising. In future analyses, we plan to examine their predictive relation to children's emergent literacy skills.

Table 4. Mean Composite Ratings For Children's Frequency of Participation in Activities Contributing to Different Dimensions of Literacy Development

		Type of Comparison			
	Overall Mean (with *SD*)	Income Level		Ethnicity (low income)	
		Lower	Middle	Euro. Am.	Afr. Am.
Dimension of Development	(N = 41)	(n = 31)	(n = 10)	(n = 13)	(n = 10)
Orientation to print	1.42 (0.53)	1.34	1.72	1.40	1.49
Knowledge of the world	1.48 (0.49)	1.47	1.52	1.42	1.64
Narrative competence	2.08 (0.61)	2.07	2.15	2.15	2.23
Phonological awareness	1.44 (0.50)	1.38	1.65	1.35	1.51

Children's Experiences with Print as Reported in the Parents' Diaries

All diaries were read closely for references to experiences involving print, and a listing of these experiences was generated for each family. A coding scheme the research team devised for characterizing the experiences was influenced by schemes developed by Teale (1986) and by Goldenberg, Reese, and Gallimore (1992) that were based on print-related activity observed directly in the homes of low-income children of varied sociocultural backgrounds. We identified three main uses of literacy in the activities involving print, corresponding to three broad cultural themes: literacy is a source of entertainment; literacy consists of a set of skills that should be deliberately cultivated; and literacy is an intrinsic ingredient of everyday life, figuring prominently in daily routines. A detailed description of the coding scheme, including subcategories, appears in Appendix B.

The data were examined in two ways. First, for each family, we determined whether or not there were any entries in each of the coding categories. Table 5 shows the percentages of families reporting at least one activity in the various categories. Note that several activities were mentioned by approximately half of the families, including joint book reading, homework, and daily routines involving print. Chi-square analyses were used to determine whether families differed (1) as a function of income level and (2), within the lower-income neighborhoods, as a function of ethnicity. The only significant difference was found in the entertainment domain; specifically, more middle-income parents than lower-income

Table 5. Percentages of Parents Spontaneously Reporting Children's Print-Related Experiences in Various Domains at Least Once in the Diaries

	Type of Comparison			
	Income Level		Ethnicity (low income)	
	Lower	Middle	Euro. Am.	Afr. Am.
	(n = 31)	(n = 10)	(n = 13)	(n = 10)
Entertainment				
Joint book reading	59	67	67	50
Independent reading	34	78*	42	30
Play involving print	41	67	42	30
Incidental exposure to print	45	22	67	30
Visits to libraries	03	22	08	00
Cultivation of Literacy Skills				
Homework	48	44	42	60
Practice	41	11	25	50
Daily Routines	59	67	58	60

*Comparisons of the two means immediately to the left of the asterisk were significant at $p < .05$.

parents reported that their children interacted with books independently or on their own initiative, χ^2 (1) = 5.21, $p < .03$.

For the second analysis, we focused on the proportion of print-related activities reported in the diaries that fell into each of the three broad domains. Because the diaries differed considerably in length, and because there were large differences in the number of print-related experiences that were reported, an absolute frequency count would have been inappropriate. Our purpose here was to discover the relative emphases placed by families on the three different cultural themes. Table 6 shows the proportional distribution. Overall, more than half of the references to literate activity reflected entertainment uses, while almost one-third dealt with the cultivation of literacy skills. Planned comparisons using the proportion data revealed a significant sociocultural difference with respect to the skill theme. Specifically, lower-income parents devoted proportionately more attention in their diaries to the cultivation of literacy skills than did middle-income parents, $F(1,35) = 5.33$, $p < .03$.

DISCUSSION

The present report has documented some of the socialization resources and activities available in the ecocultural niches of urban pre-kindergartners. It has revealed considerable variation in the everyday experiences of these children that may prove significant for later literacy development. The longitudinal nature of the study and the concomitant collection of

Table 6. Proportion of Print-Related Experiences Reported in the Diaries in Each of the Three Categories

	Type of Comparison			
	Income Level		Ethnicity (lower income)	
	Lower	Middle	Euro. Am.	Afr. Am.
Entertainment	.47	.70	58	35
Cultivation of Literacy Skills	.36	.11*	29	41
Daily Routines	.17	.20	12	23

*Comparisons of the two means immediately to the left of the asterisk were significant at $p < .05$.

measures of children's emergent literacy will permit us to address this issue in the future. Although some of the variation apparently reflects sociocultural differences, much of it reflects differences in individual families.

In this section, we first comment on the possible role of some specific everyday experiences. We then go on to discuss the cultural themes informing the kinds of literate experiences parents make available to their children. Finally, we discuss some methodological issues pertaining to our data collection strategy.

The Role of Selected Everyday Experiences

Families in all sociocultural groups reported that their children had frequent opportunities to engage in activities with the potential to foster development in several domains conducive to literacy: orientation toward print (e.g., storybook reading), phonological awareness (e.g. singing), knowledge of the world (e.g., television viewing), and narrative competence (e.g., mealtime conversation). The composite analyses did not reveal sociocultural differences in children's experiences with respect to these domains, though there was a trend for middle-income children to have more frequent experiences conducive to developing an orientation toward print.

Pretend play. Pretend play was identified as a common everyday experience for a substantial number of the children in all sociocultural groups. Pretend play may be related to literacy indirectly in that it promotes facility with symbol use (Pellegrini, 1985). It is also likely that some aspects of pretend play are significant, such that those activities involving literate behavior may have direct effects (Neuman & Roskos, 1992). More than two-thirds of the middle-income caregivers indicated in their diaries that their children's play involved print, and many lower-income parents also described such play. Most commonly, this entailed playing school or playing store.

Television viewing. Consistent with findings in numerous studies, television apparently plays an important role in the lives of the children in our sample. Research findings are mixed regarding the relation between television

viewing and literacy development, but there is a growing consensus that viewing need not be detrimental and may in fact be beneficial (Neuman, 1991; Reinking & Wu, 1990). To the extent that television promotes knowledge of the world and narrative competence, which in turn affect reading comprehension, children benefit. Moreover, some of the programming they watch is designed to foster literacy skills (e.g., Sesame Street). In the future, we plan to address the question of whether the greater frequency of television watching among the lower-income children, especially those who are African American, is associated with positive or negative outcomes.

Singing. Virtually all children in the sample had frequent experiences that afforded the potential for fostering phonological awareness. More than 85% of the children in each group sang frequently. Because songs typically include rhymes, these experiences provide an opportunity for children to become attuned to the sounds of words. Recall the Bryant et al. (1989) finding that children who knew many nursery rhymes had higher levels of phonological awareness, which in turn was associated with better early reading achievement. Several measures of phonological awareness included in our competency battery will permit us to examine the contribution of everyday experiences to early literacy.

Experiences with books. It is difficult to summarize the evidence regarding children's experiences with books because the different measures yielded somewhat different findings. However, it does not appear that middle-income children engage in joint storybook reading with their caregivers more frequently than do lower-income, European American children. This finding contrasts with some other studies showing more frequent storybook reading in middle-class homes. We plan to examine how storybook reading experiences relate to children's emerging competencies. There is some evidence that patterns of interaction and modes of engagement during storybook reading are more powerful predictors of later reading achievement than sheer frequency (Crain-Thoreson & Dale, 1992). We have videotaped adult-child book reading interactions that will allow us to explore this possibility.

Library use. Research has shown that library use is a powerful predictor of reading achievement and motivation (Guthrie & Greaney, 1991). In our sample, the lower-income children visited the library less frequently than the middle-income children, a sociocultural difference consistent with that found in other studies. However, all the children visited their school libraries on a regular basis, and virtually all had at least some regular contact with books at home.

Some evidence suggests that sociocultural differences in predisposition to read are already emerging. The diary analysis showed that children in middle-income homes were more likely to use literacy independently as a source of entertainment than children in lower income-homes. Perhaps the middle-income children have already had sufficient positive experiences with books by the time they are four years old that they are intrinsically motivated to use books to entertain themselves. However, it is also possible that a greater availability of mate-

rials or parental encouragement contributes to this sociocultural difference.

Cultural Themes

In line with other findings, the present study has found sociocultural differences in the ways families prepare their children for literacy. There is some evidence that middle-income families adopt a more playful approach to the early socialization of literacy than lower-income families. Recall that middle-income children were more likely to use literacy independently as a source of entertainment, and they had more contact with books on a daily basis than lower-income children. Recall also that the lower-income parents attached relatively more importance in their diaries to literate activities undertaken for the purpose of cultivating literacy skills than did middle-income parents. It may be that middle-income parents prefer to provide their children with opportunities that enable them to construct their own understandings of literacy, through such means as ready availability of literacy materials for independent use. Lower-income parents, in contrast, may feel they need to provide more structured opportunities for their children that entail direct instruction, drill, and practice. See Baker, Serpell, and Sonnenschein (in press) for further discussion of this issue.

Our data suggest that three cultural themes inform the kinds of print-related experiences parents make available to their children:

1. Literacy is a source of entertainment; book reading is fun; and there are many other enjoyable activities in which literacy plays a role.

2. Literacy consists of skills that should be deliberately cultivated; children should be given opportunities to practice their emerging competencies.

3. Literacy is an intrinsic ingredient of everyday life; by virtue of their participation in daily routines such as shopping and food preparation, children come to see the functional value of literacy.

Middle-income families tend to show greater endorsement of the cultural theme of literacy as a source of entertainment than do lower-income families, as reflected in (1) the higher proportion of families reporting in the diaries that children engaged in self-initiated or independent reading, (2) the greater likelihood that children engage in storybook reading on a daily basis, as reflected in the frequency data, and (3) the greater likelihood of visits to the library, as reflected in the frequency data. Lower-income families, in contrast, tend to give more attention to the theme of literacy as a skill to be deliberately cultivated, as reflected in their proportionally greater attention to skill-development activities in the diaries.

Methodological Issues

To what extent have we succeeded in characterizing the ecocultural niches of the children in the study? It is important to point out first of all that the data included in the present report

provide only part of the picture. Additional data include (1) detailed interviews with parents regarding their beliefs, goals, and values; (2) assessments of children's competencies on a variety of literacy tasks; (3) observations of children interacting with older siblings and caregivers in activities related to literacy; (4) interviews with teachers; and (5) classroom observations. All of these data sources will enable us to bring our characterization into sharper focus, as will the longitudinal nature of the study.

Some caution is needed in interpreting the data in the present report, given its derivation from verbal report measures. Although parents were not told that we were interested in literacy-relevant experiences, they knew that our goal was to acquire a better understanding of the kinds of experiences children have at home. Because our contact with them was through the school, parents may have felt they should emphasize certain activities they believed relevant to schooling. Thus, social desirability factors undoubtedly influenced what parents chose to include in their diaries, as well as what they chose to exclude.

Nevertheless, the diaries were probably less subject to this type of bias than the structured sections of the ecological inventory form. The diaries reflected the parents' spontaneous reports of activities and provided some indication of what the parents thought was worth mentioning. The structured form, in contrast, consisted of a listing of activities presented to parents; frequency of participation ratings may have been influenced by parental perceptions that we regarded these activities as important.

Our data collection strategy has the advantage of providing converging evidence regarding many of the children's experiences. To illustrate, information about book reading is available both through the diaries and the ecological inventory, so it is possible to check the correspondence between the two data sources. All 22 caregivers who spontaneously reported storybook reading with their child during the course of the week in the diary also indicated in the inventory that storybook reading occurred at least once a week and included adults as co-participants. Of the 13 caregivers who did not spontaneously report storybook reading in the diaries, only four were apparently inconsistent in indicating in the inventory that storybook reading occurred at least once a week with adults as co-participants. The remaining caregivers either indicated lesser frequency of book reading altogether or indicated that book reading occurred with other children but not adults. This degree of consistency gives us confidence in the data. Additional converging evidence regarding book reading and other everyday experiences will become available through our other data sources.

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APPENDIX A

EARLY CHILDHOOD PROJECT
ECOLOGICAL INVENTORY

Record form for second visit with family

PREPARATORY INSTRUCTIONS:

Ecological Inventory (pages 1-5)

BEFORE THE VISIT, each activity recorded in the diary will be entered on a relevant page of the inventory. On each of the following pages, **section 1** is reserved for these **ENTRIES FROM THE DIARY**, together with questions designed to clarify and/or amplify the account in the diary. On most pages, **section 2** is reserved for **ADDITIONAL ACTIVITIES** mentioned during the home visit interview in response to the following open-ended question:

"Are there any other activities of this type, apart from what we've discussed already today, that your child, _____, gets involved in, either by taking part directly (i.e., as an active participant), or by just watching (i.e., as an observer)?"

Section 3 contains a set of questions about certain **SPECIFIC TYPES OF ACTIVITY** falling under the general heading of that page, with pre-coded alternatives concerning (1) the **frequency** with which the caregiver estimates that the **child participates** in that type of activity, and (2) the **age-range** of the other people with whom the child generally shares the activity (**principal co-participants**). (3) The last column in this table is to be used as a key to link this list of types of activity to each of the more detailed descriptions in sections 1 and 2 and on the reverse side of the page, as **examples of each type**. The detailed descriptions will be numbered serially as they appear on the record form, and the serial number of a given activity will be entered in the appropriate row of this column in section 3. **Frequency** is rated on a 4-point scale (0, 1, 2, 3). 0 = never (not at all); 1 = rarely (less than once a week); 2 = occasionally (at least once a week); 3 = often (every or almost every day). **Age range** for co-participants is categorized into YC (younger children than focal child or a peer); OC (older child than focal child); or A (adult).

The reverse side of each page is reserved for **FURTHER ADDITIONAL EXAMPLES** of recurrent activities in the child's niche mentioned by the caregiver while responding to section 3.

The following headings define the broad categories under which the various types of activity in which we are interested have been classified.

Page 2: Game-playing activities
Page 3: Meal-time activities
Page 4: TV-watching, radio, cassette-player, etc.
Page 5: Recurrent outings
Page 6: Reading, writing, or drawing activities

Family #:_____
Date:_____

Games and Play Activities

1. **Mentioned in Diary** (+ questions)
(serial no)

2. **Added during interview** (other ways in which your child often plays at home, in the family or in the neighborhood):

	0/1/2/3	YC/OC/A	
Types of play activity:	**Frequency of child's engagement**	**Principal co-participants (age-group)**	**Instances (e.g.) (serial no.)**
1. Pretend play (e.g., with peers; in the bath, etc.)	.....	.....	.....
2. Story-telling	.....	.....	.....
3. Word games (incl. rhyming)	.....	.....	.....
4. Hand-clapping	.....	.....	.....
5. Singing	.....	.....	.....
6. Board games	.....	.....	.....
7. Educational toys	.....	.....	.....

Meal-time Activities

1. Mentioned in Diary (+ questions)
(serial no.)

2. Added during interview (other activities in which your child often participates at meal-times):

3. Types of meal-time activity:	0/1/2/3 **Frequency of child's engagement**	YC/OC/A **Principal co-participants (age-group)**	**Instances (e.g.) (serial no.)**
1. Food preparation	.....	.....	.....
2. Playing with refrigerator displays (specify type: e.g., letters, numbers, dinosaurs, etc.)	.....	.....	.....
3. Conversation	.....	.....	.....
4. TV-watching	.....	.....	.....
5. Other (e.g., prayers, quizzes, reading, etc.)	.....	.....	.....

TV / Radio / Video or Audiocassette Recorders / Record Players

1. **Mentioned in Diary:**
   (serial no.)

2. Does the home contain any of the following? (tick if present)
   TV video (VCR) radio record-player CD audiocassette recorder?

3. Does the focus child ever watch the following **type of program** on TV or video, and (if so) how often?

	0/1/2/3 **Frequency of child's engagement**	YC/OC/A **Principal co-participants (age-group)**
Cartoons	.....	.....
Sit Coms (e.g., Murphy Brown)	.....	.....
Educational (e.g., Sesame Street)	.....	.....
Game shows	.....	.....
Story/movie (e.g., Quantum Leap)	.....	.....
Sports	.....	.....
News/Documentary	.....	.....
Musical	.....	.....

Does the focus child ever listen to **music** on radio or record player/audiocassette recorder/CD, and (if so) how often? ....

Does the focus child ever sing any of the songs s/he hears on TV/video/radio/cassette/record player/CD? Yes / No

If so, what are the titles of two songs the child knows how to sing?

1. .....
2. .....

How does the focus child locate programs on TV?

a) by asking an adult or elder child to select the channel
b) by using the numbers on the selection panel/remote control

Does the focus child ever select programs by looking for them in the newspaper/TV guide? Yes / No

How often does the focus child watch the family VCR? (0,1,2,3)

Does s/he have any favorite videos that s/he likes to watch over and over again? Yes / No If so, what are her/his 2 most favorite videos?

1. .....
2. .....

Does the home have a video game system (e.g., Nintendo) the child is allowed to play with? Yes / No

Recurrent Outings

1. Mentioned in Diary (+ questions)
(serial no.)

2. Added during interview (other outings on which your child is often taken):

Types of outing:	0/1/2/3 **Frequency of child's engagement**	YC/OC/A **Principal co-participants (age-group)**	**Instances (e.g.) (serial no.)**
1. Visit to another home (e.g., grandparent)	.....	.....	.....
2. Shopping	.....	.....	.....
3. Errands	.....	.....	.....
4. Library	.....	.....	.....
5. Lessons or classes (e.g., music, dancing, religious instruction)	.....	.....	.....
6. Other	.....	.....	.....

Reading, Writing, or Drawing Activities

1. Mentioned in diary (+ questions)

2. Added during interview (other activities in which your child participates that involve reading, writing, or drawing)

3. (If no mention has been made of reading activities) Does your child ever have any books or magazines read to her/him? Yes / No

If yes,	0/1/2/3 **Frequency of child's engagement**	YC/OC/A **Principal co-participants**
A. Types of books:		
Preschool (e.g., ABCs)	.....	.....
Picture books (no words)	.....	.....
Storybooks	.....	.....
Nonfiction books	.....	.....
B. Other printed materials (e.g., magazines, newspapers, coupons)	.....	.....

C. Does your child ever look through any printed materials on his or her own? (e.g., cards, coupons, TV guides, etc.)

Specify **type**		0/1/2/3 **frequency**	**Principal co-participants**
.....	.....	.....	.....
.....	.....	.....	.....

4. Does your child ever do drawings or coloring?

Specify **type**	0/1/2/3 **frequency**	**Principal co-participants**
.....	.....	.....
.....	.....	.....

5. Does your child ever do writing?

Specify **type**	0/1/2/3 **frequency**	**Principal co-participants**
.....	.....	.....
.....	.....	.....

APPENDIX B

Coding Scheme for Print-Related Experiences Reported in the Diaries

1. Entertainment

Books and other literacy-related materials and activities serve as the source of entertainment. (For (d), print is present but need not be processed in order for the activity to be entertaining.)

a. *Joint book reading*: Someone else is reading to the child: an adult or a sibling.

b. *Independent or self-initiated reading*: The child is looking at books or other print materials on his own or with siblings/peers at the same or lower skill level. The category also should be used when the child takes over in a joint storybook reading interaction, "pretending" to read.

c. *Play involving print*: The protypical activity is playing school, signaled by an explicit statement that the child was playing school. Note that if the parent reports that the child was playing school and also writes that he or she pretended to read while doing so, 1-b should also be coded. Also included here are activities in which the play depends on attending to print, such as playing store or playing with educational toys.

d. *Incidental exposure to print while being entertained*: Every child in the sample is exposed to print incidentally while watching television, but the instances of TV watching were not itemized. Thus, we could give each child "credit" for this type of incidental exposure but decided not to because it would mask possible differences among families in other types of incidental exposure to print. Other types of incidental exposure include playing games where print is likely to be present but is not the focus of the activity (e.g., playing cards, playing Candy Land; coloring in coloring books). Note that if it is not specified where or what the child was coloring or drawing, the activity should not be considered print-related at all.

e. *Visits to libraries and book stores*

2. Cultivation of Literacy Skills

Activities involving print are undertaken with the explicit purpose of teaching/learning literacy skills or the activities have the potential for promoting basic skills through repetition and practice.

a. *Homework and other school-related activities*: The caregiver explicitly states that the work the child is doing is homework. Note that in some cases it cannot be verified that the activity actually involves print. Also included here are references to things the child brought home from school (e.g., report card, Valentine's card).

b. *Practice of literacy skills*: The caregiver reports that the child worked on a literacy skill, such as writing his name or reciting the letters of the alphabet. In some cases, the activities may actually have been assigned as homework, but if the caregiver doesn't explicitly say this they should be coded in this category instead. Sometimes the caregiver initiates the activity; other times the child does. In some cases, an activity may be double-coded. For example, when the child plays with magnetic letters, he/she is engaging in play involving print (1-C), but because the play seems explicitly oriented towards skill-building, it should also be coded here.

3. Daily Routines

The child participates in daily routines (including religious activities and interpersonal communication) in which print is involved. Most of the activities included in the diary that were coded in this category involved shopping and food preparation.

[redacted]

[redacted]

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